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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,302	08/13/2002	Frank Lindqvist	627-1446	5942

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EXAMINER	
TIBBITS, PIA FLORENCE	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/009,302	LINDQVIST ET AL.	
	Examiner	Art Unit	
	Pia F Tibbits	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 May 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This Office action is in answer to the response filed 8/19/2003. The restriction requirement is withdrawn.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the type of device (in which the accumulator is used), the common database (for these data for different devices for the treatment of accumulators), the primary coil, the rectifier, the positive cable clip, the negative cable clip, the automatic actuator, the device for a regeneration process, means for registering and measuring of process data of at least in one cell of the accumulator, and means for controlling the treatment process based on this process data must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claims 1-42 are objected to because of the following informalities: the limitation "accumulator" and "battery" is used in various claims. Applicant is reminded to use consistent language for the limitations recited, in order to easily find support, as well as provide proper antecedence for all claimed limitations.

Claim 12: "current running to the accumulator" and "remains in the main constant" are idiomatic, and should be replaced by --- current supplying the battery---, and ---remains mainly constant----.

Claim 14: "the specific accumulator" lacks antecedence.

Claim 17: "electricity supply network" lacks antecedence in the disclosure. The term "power source" should be used.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2, 5, 7, 13-18, 20, 24-26, 33, 39, 41, 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2: the use of "and/or" makes the claim language confusing because it is not clear what applicant is actually claiming. Furthermore, applicant is reminded that "or" should only be used with alternate terms, e.g., rod or bars, etc. In order to continue prosecution, it was interpreted to read that the process data take into consideration the conductivity or the temperature.

Claim 5, 7: the statement "a current" is not clear, since "a current" is already recited in claim 1, upon which claims 5 and 7 depend.

Claims 13, 24: the statement "name of the customer, date (of what), accumulator manufacturer, type number for the accumulator" is not clear, and needs to be explained how this would contribute to charging sufficient to generate gassing in a lead acid battery, since they are pure statistical data.

Claims 14, 25: the use of "and/or" makes the claim language confusing because it is not clear what applicant is actually claiming. . Furthermore, applicant is reminded that "or" should only be used with alternate terms, e.g., rod or bars, etc. Applicant to clarify what "other accumulators" and "previous treatments" means.

Claim 15: the statement "data for different devices for the treatment of accumulators" is not clear since just one device (see fig.1 of the instant application) is disclosed therein.

Claims 16, 26: the use of "and/or" makes the claim language confusing because it is not clear what applicant is actually claiming. . Furthermore, applicant is reminded that "or" should only be used with alternate terms, e.g., rod or bars, etc. Applicant to clarify how "network is arranged to be used for the surveillance of the treatment process" and what "the upgrading of software for the treatment process" means.

Claim 17:the statement following "**adapted to**" is ambiguous, especially in view of the fact that no circuitry drawing is attached, and MPEP 2106 states that "Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation may raise a question as to the limiting effect of the language in a claim".

Claim 18: the use of "and/or" makes the claim language confusing because it is not clear what applicant is actually claiming. . Furthermore, applicant is reminded that "or" should only be used with alternate terms, e.g., rod or bars, etc.

Claim 20: the statement "means for dynamically, during the treatment process, altering the length of the current supply periods" is not clear, since the term "dynamically" needs to be defined.

The above are but a ***few*** specific examples of indefinite and functional or operational language used throughout the claims, and are only intended to illustrate the extensive revision required to overcome the rejection under 35 USC 112, second paragraph. The above-mentioned corrections therefore, are in no way a complete and thorough listing of every indefinite and functional or operational language used throughout the claims. Applicant is required to revise all of the claims completely, and not just correct the indefinite and functional or operational language mentioned. The following art rejections are given in view of the above rejections of claims under 35 USC 112, second paragraph. Therefore, the following art rejections are applied only as far as the claims are understood in view of rejections made under the second paragraph of 35 USC 112.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-7, 9-16, 27-33, and 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wihk** [5701069], in combination with **Eryou et al**. [hereinafter Eryou] [5648714].

Wihk discloses in the abstract, disclosure and drawings 1-3 a method and device to charge and maintenance charge a lead acid battery 6 with pulses in the region of a mains voltage period sufficient to generate gassing, with pauses of about 10 seconds, [see also examples 1-5, column 5, line 60]. Wihk does not disclose specifically the current supply periods having a length of between 0.01 and 0.5 seconds, a current level between 80 and 1000 A, and pauses having a length of 1 to 20 seconds, registering the process data, and controlling the treatment process with the process data.

With regard to the value of the current supply periods having a length of between 0.01 and 0.5 seconds, absent any criticality, is only considered to be the use of "optimum" value that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum value of a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regard to the value of the a current level between 80 and 1000 A, absent any criticality, is only considered to be the use of "optimum" value that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum value of a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regard to the pauses having a length of 1 to 20 seconds, absent any criticality, is only considered to be the use of "optimum" value that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum value of a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Eryou discloses the charging process of a lead acid battery being governed by a microprocessor which periodically checks the condition of the battery and customizes both the charging current, and the strength of the spikes of energy to the battery condition [see also column 2, lines 48-51]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Wihk's apparatus and include a microprocessor, as disclosed by Eryou, in order to perform a process according to the condition of the battery, and to be able to register the process data, and control the treatment process with the registered process data.

8. Claims 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wihk and Eryou**, as described above, in combination with **Gali** [4871959].

Wihk and Eryou disclose a method and device to charge and maintenance charge a lead acid battery with pulses in the region of a mains voltage period sufficient to generate gassing, with pauses of about 10 seconds, registering the process data, and controlling the treatment process with the process data [see also column 8, lines 32-67]. Wihk and Eryou do not disclose specifically the structure of the charger to include a transformer having a primary coil connected to a power source, a secondary coil, a rectifier connected to the secondary coil, a positive cable clip and a negative cable clip, connected to a battery which is to be treated, and an automatic actuator connected to the primary coil for intermittent connecting and disconnecting of the power source.

Gali discloses in figures 1-3 a charger including a transformer 29, primary coil 28, secondary coil 33, a 4 diode AC to DC rectifier bridge 40, connected through lines 18 and 19 to connection by clips 20 and 21 to, respectively, the positive and negative terminals of lead-acid battery 11, and transistors 31A and 31B connected to the primary coil for intermittent connecting and disconnecting of the power source.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Wihk's and Eryou's apparatus and include a charger structure, as disclosed by Gali, in order to be able to intermittently connect and disconnect the power source.

As to claims 2, 18, Wihk discloses that the process data consider a temperature of the electrolyte/battery [see also column 1, lines 33-38].

As to claim 3, sensors for the process data being introduced into the electrolyte in each cell where process data is to be registered, Wihk discloses in figures 1-3 sensors attached to the electrodes of the battery 6. Therefore, it is an inherent function of the sensors attached to the electrodes of the battery 6 to register data regarding battery 6, and MPEP to 2100 states that the disclosure of a limitation may be expressed, implicit or **inherent.**

As to claims 4, 17, a length of said current supply periods, which may be between 0.01 and 0.5 seconds, a length of said pauses, which may be between 1-20 seconds, and the current supply periods preferably being considerably shorter than the pauses, absent any criticality, is only considered to be the use of "optimum" values that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum value of a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claims 5, 21, a current being applied during the current supply periods, which current is strong enough in order for each cell in the accumulator to reach a voltage of at least 2.5 V during the current supply periods, absent any criticality, is only considered to be the use of "optimum" value that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum value of a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claims 6, 17, 22, 23, the current supply periods amounting to at least 80 A and 1000 A at the most, is only considered to be the use of "optimum" value that one having ordinary skill in the art at

the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum value of a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claim 7, the current level during the current supply periods being 150 A at the most, is only considered to be the use of "optimum" value that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum value of a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claim 9, the registering of process data and the controlling being continuously performed during the entire or substantially the entire treatment process: it is an inherent function of the charger disclosed by Wihk and Eryou, to continuously register and control the battery process data, and MPEP 2100 states that the disclosure of a limitation may be expressed, implicit or **inherent.**

As to claim 10, registering of process data being performed during a predetermined time period of the entire treatment period, one skilled in the art would be able to choose an appropriate predetermined time period to register the process data, since it is a design choice, and the courts have held that it is unpatentable, because registering of process data being performed during a predetermined time period of the entire treatment period would not have modified the operation of the device, see ***In re Japikse***, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

As to claims 11, 19, registering of process data and controlling based on this process data being individually performed for all or substantially all cells in the battery, one skilled in the art would be able to choose registering of process data and controlling based on this process data being individually performed for all or substantially all cells in the battery, since it is a design choice, and the courts have held that it is unpatentable, because registering of process data and controlling based on this process data being individually performed for all or substantially all cells in the battery would not have modified the operation of the device, see ***In re Japikse***, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

As to claim 12, the total current supplying the battery during the current supply periods being registered by surveying of a mean value for the process data for a small number of current supply periods, optimal control, and thereby optimal treatment, thereafter being ensured when the mean value of the succeeding current supply periods, remains mainly constant, one skilled in the art would be able to choose the total current supplying the battery during the current supply periods being registered by surveying of a mean value for the process data for a small number of current supply periods, optimal control, and thereby optimal treatment, thereafter being ensured when the mean value of the succeeding current supply periods, remains mainly constant, since it is a design choice, and the courts have held that it is unpatentable, because registering of process data and controlling based on this process data being individually performed for all or substantially all cells in the battery would not have modified the operation of the device, see ***In re Japikse***, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

As to claim 13, general data being chosen from the group consisting of name of the customer, date, accumulator manufacturer, type number for the accumulator, type values for the accumulator, year of manufacture, time of the first operational use of the accumulator, time between previously performed treatments, and type of device in which the accumulator is used: Wihk and Eryou disclose using a microprocessor to register the process data, and controlling the treatment process with the process data. To use general data being chosen from the group consisting of name of the customer, date, accumulator manufacturer, type number for the accumulator, type values for the accumulator, year of manufacture, time of the first operational use of the accumulator, time between previously performed treatments, and type of device in which the accumulator is used, absent any criticality, is considered to be nothing more than a choice of engineering skill, because neither non-obvious nor unexpected results, i.e., results which are different in kind and not in degree from the results of the prior art, will be obtained as long as the all chosen data is registered for use, as already suggested by Wihk and Eryou.

As to claim 20, as best as it can be understood at this time, Wihk and Eryou clearly disclose that upon connecting to a battery, the microprocessor determines the battery voltage and the battery impedance; based on these conditions the program finds the optimal charging current, and the voltage

limit. Once the battery voltage reaches this limit, and if the battery impedance is high, the microcontroller starts to pulse the battery: the higher the battery impedance is, the higher pulsing current is used [see also column 8 of the Eryou patent].

9. Claims 8 and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wihk and Eryou, as described above, in combination with **Gali** [RE35643].

Wihk and Eryou discloses a method and device to charge and maintenance charge a lead acid battery with pulses in the region of a mains voltage period sufficient to generate gassing, with pauses of about 10 seconds, registering the process data, and controlling the treatment process with the process data. Wihk and Eryou do not disclose specifically a number of cycles, each cycle comprising a regeneration part of 2-8 hours, and a charge part.

Gali discloses in the abstract, disclosure and drawings 1-5c cycling a lead acid battery switchable between rejuvenator and charger modes of operation so that lead sulphate deposits that have occurred on battery plate surfaces will be released, either going back into the solution or broken up. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Wihk's and Eryou's apparatus and cycle a lead acid battery switchable between rejuvenator and charger modes of operation, as disclosed by Gali, in order to avoid lead sulphate deposits on the plates of the battery.

As to claims 35 and 36, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the length of time the battery is charged, since it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claim 37, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the number of cycles for the battery, since it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claim 38, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for when to start registering the process data, since it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With respect to the method claims 1-42: the method steps will be met during the normal operation of the apparatus described above.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in PTO-892 and not mentioned above disclose related apparatus.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is (703) 308-7305. If unavailable, contact the Supervisory Patent Examiner Mike Sherry whose telephone number is (703) 308-1680.

13. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or (703) 308-7724.

PFT

August 30, 2003